Asbestos Standard for Construction Industry

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Elizabeth Dole, Secretary

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About This Pamphlet

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Introduction

Asbestos is a widely used, mineral-based material that is resistant to heat and corrosive chemicals. Depending on the chemical composition, fibers may range in texture from coarse to silky. The properties that make asbestos fibers so valuable to industry are its high-tensile strength, flexibility, heat and chemical resistance, and good frictional properties.

Asbestos fibers enter the body by inhalation of airborne particles or by ingestion and can become embedded in the tissues of the respiratory or digestive systems. Years of exposure to asbestos can cause numerous disabling or fatal diseases. Among these diseases are asbestosis, an emphysema-like condition; lung cancer; mesothelioma, a cancerous tumor that spreads rapidly in the cells of membranes covering the lungs and body organs; and gastrointestinal cancer.

Asbestos in Construction

Construction businesses use 50 percent (1984 figures) of the U.S. supply of asbestos in asbestos-cement pipes, sheets, siding shingles, floor tiles, coating, and sealants. Some 29,000 workers install asbestos insulation during the construction of buildings. Other estimates of exposed workers include 15,000 in ship repair, 20,400 in demolition, 67,800 in abatement, 82,500 in general building renovation, 135,700 doing routine maintenance in commercial and residential buildings, and 183,200 in routine maintenance in general industry.

In September 1988, the Occupational Safety and Health Administration (OSHA) issued a final asbestos standard for the construction industry. The standard incorporates an excursion limit of 1 fiber of asbestos per cubic centimeter of air (f/cc) over a 30-minute sampling period, thereby amending 29 Code of Federal Regulations (CFR) Part 1926.58.

OSHA based this determination on its review of the

asbestos rulemaking record using criteria set forth by the Court of Appeals for the District of Columbia Circuit (*Public Citizen Health Research Group v. Tyson*, 796 F. 29 1479 (D.C. Cir., 1986) and *Building and Construction Trades Department, AFL-CIO v. Brock*, 838 F. 2d 1258, 1273 (D.C. Cir. 1988)).

Exposure

Permissible Exposure Limits (PELs) - (1) Time-weighted average limit (TWA) of 0.2 f/cc averaged over an 8-hour day; (2) Excursion limit of 1.0 f/cc averaged over a 30-minute sampling period.

Action Level - 0.1 f/cc averaged over 8 hours. If the action level or the excursion limit is reached or exceeded, employers must begin compliance activities such as air monitoring, employee training, and medical surveillance.

Monitoring

Employers who have a workplace or work operation covered by this standard must perform initial monitoring to determine the airborne concentrations of asbestos to which employees may be exposed. If employers can demonstrate that employee exposures are below the action level and/or excursion limit by means of objective data, or historical data, the initial monitoring is not required. If initial monitoring indicates that employee exposures are below the action level and/or excursion limit, then periodic monitoring is not required. Within regulated areas, the employer must conduct daily monitoring unless all workers are equipped with supplied-air respirators operated in the positive-pressure mode. If daily monitoring within the regulated areas indicates by statistically reliable measurements that employee exposures are below the action level and/or excursion limit, then no further monitoring is required for those employees whose exposures are represented by such monitoring. Employees must be given the chance to observe monitoring, and affected employees must be notified as soon as possible following the employer's receipt of the results.

Regulated Areas

The employer must establish a regulated area where airborne concentrations of asbestos exceed or can reasonably be expected to exceed the TWA and/or excursion limit, or when certain types of construction work are performed, such as cutting asbestos-cement sheets and removing asbestos-containing floor tiles. Only authorized personnel may enter regulated areas. All persons entering a regulated area must be supplied with an appropriate respirator. No smoking, eating, drinking or applying cosmetics is permitted in regulated areas. Warning signs must be displayed at each regulated area and must be posted at all approaches to regulated areas. These signs must bear the following information:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA

Where feasible, the employer shall establish negative-pressure enclosures before commencing asbestos removal, demolition, and renovation operations.

- A competent person shall be designated to set up the enclosure and ensure its integrity and supervise employee activity within the enclosure.
- Exemptions are given for small-scale, short duration maintenance or renovation operations.
- The employer shall conduct daily monitoring that is representative of the TWA and short-term exposure of each employee who is assigned to work within a regulated area. Short-term monitoring is required whenever asbestos concentrations will not be uniform throughout the workday and where high

concentrations of asbestos reasonably may be expected to be released or created in excess of the excursion limit.

In addition, warning labels must be affixed on all asbestos products and to all containers of asbestos products, including waste containers, that may be in the workplace. The label must include the following information:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

Methods of Compliance

To the extent feasible, engineering and work practice controls must be used to reduce employee exposure to within the PELs. The employer must use one or any combination of the following control methods to achieve compliance:

1. Local exhaust ventilation equipped with High Efficiency Particulate (HEPA) filter dust collection systems.
2. General ventilation systems.
3. Vacuum cleaners equipped with HEPA filters.
4. Enclosure or isolation of asbestos dust-producing processes.
5. Use of wet methods, wetting agents, or removal encapsulants during asbestos handling, mixing, removal, cutting, application, and clean-up.
6. Prompt disposal of asbestos-containing wastes in leak-tight containers.

Work practices that are prohibited include the following:

1. The use of high-speed abrasive disc saws that are not equipped with appropriate engineering controls.

2. The use of compressed air to remove asbestos-containing materials, unless the compressed air is used in conjunction with an enclosed ventilation system.

Where engineering and work practice controls have been instituted but are insufficient to reduce employee exposure to or below the PELs, respiratory protection must be used to supplement these controls.

Respiratory Protection

Respirators must be used (1) while feasible engineering and work practice controls are being installed or implemented; (2) during maintenance and repair activities, or other activities where engineering and work practice controls are not feasible; (3) if feasible engineering and work practice controls are insufficient to reduce employee exposure to or below the exposure limits; and (4) in emergencies. Respirators must be selected according to the provisions of Title 30, CFR Part II. The employers must develop a respirator program in accordance with General Industry Standards 29 CFR 1910.134.

Employees who use a filter respirator must change filters whenever an increase in breathing resistance is detected. Employees who wear respirators must be allowed to wash their face and respirator facepiece whenever necessary to prevent skin irritation associated with respirator use. An employee must not be assigned to tasks requiring the use of respirators if a physician determines that the employee is unable to function normally wearing a respirator or that the employee's safety and health or that of others would be affected by the employee's use of a respirator. In this case, the employer must assign the employee to another job or give the employee the opportunity to transfer to a different job that does not require the use of respirator. The job should be with the same employer, in the same geographical area, and with the same seniority, status, and rate of pay, if such a position is available.

The employer must assure that a respirator issued to an employee fits properly and exhibits minimum facepiece leakage. Employers must perform quantitative or qualitative fit tests at the time of initial fitting and at least every 6 months for each employee wearing negative-pressure respirators.

Protective Clothing

For any employee exposed to airborne concentrations of asbestos that exceed the PELs (TWA and/or excursion limit), the employer must provide and require the use of protective clothing such as coveralls or similar full-body clothing, head coverings, gloves, and foot coverings, or other appropriate protective equipment.

Asbestos-contaminated work clothing must be removed in change rooms and placed and stored in closed, labeled containers that prevent dispersion of the asbestos into the ambient environment. Protective clothing and equipment must be cleaned, laundered, repaired or replaced to maintain their effectiveness. The employer must inform any person who launders or cleans asbestos-contaminated clothing or equipment of the potentially harmful effects of exposure to asbestos. Contaminated clothing and equipment taken out of change rooms or the workplace for cleaning, maintenance, or disposal must be transported in sealed impermeable bags, or other closed impermeable containers and must be appropriately labeled.

Hygiene Facilities and Practices

The employer must provide clean change areas for employees required to work in regulated areas or required to wear respirators and protective clothing. Change areas are to be equipped with separate storage facilities for protective clothing and street clothing. Where food and beverages are consumed at the work site and employees are exposed to airborne concentrations of asbestos in excess of the PELs (TWA and/or excursion limit), the employer must provide lunch areas in which the airborne concentrations of asbestos are below the action level and/or

excursion limits. In lieu of the clean change area requirement, the employer may permit employees engaged in small scale, short-duration maintenance operations to clean their protective clothing with a portable HEPA-equipped vacuum before employees leave the areas where maintenance was performed.

For asbestos removal, demolition, and renovation operations, the employer must establish an employee decontamination area that is adjacent and connected to the regulated area. The decontamination area must consist of an equipment room, shower area, and clean room in series. The clean room must be equipped with a locker or appropriate storage container for each employee. The equipment room must be supplied with impermeable, labeled bags and containers for the containment and disposal of asbestos-contaminated protective clothing and equipment. Where feasible, shower facilities must be contiguous both to the equipment room and the clean change room. The employer must ensure that employees enter and exit the regulated area through the decontamination area.

Information and Training

The employer must develop a training program for all employees who are exposed to airborne concentrations of asbestos at or above the action level and/or excursion limit. Training must be provided prior to or at the time of initial assignment and at least yearly thereafter. The training program must inform employees about the methods of recognizing asbestos and the health hazards of asbestos exposure; the relationship between asbestos and smoking in producing lung cancer; operations that could result in asbestos exposure; the importance of necessary protective controls to minimize exposure including, as applicable, engineering controls, work practices, respirators, housekeeping procedures, hygiene facilities, protective clothing, decontamination procedures, emergency procedures, and waste disposal procedures; the purpose, proper use and limitations of respirators; and the medical surveillance program. All training materials must be available to the employees without cost and, upon request,

to the Assistant Secretary for OSHA and the Director of the National Institute for Occupational Safety and Health (NIOSH).

Housekeeping

Vacuuming equipment, when used, must have HEPA filters. Asbestos waste, scrap, debris, bags, containers, equipment, and asbestos-contaminated clothing consigned for disposal must be collected and disposed of in sealed, labeled, impermeable bags or other closed, labeled impermeable containers.

Medical Surveillance

The employer must establish a medical surveillance program, prior to assignment, for all employees who will be required to wear negative-pressure respirators or who will be exposed to airborne concentrations of asbestos at or above the action level and/or excursion limit for 30 or more days per year. All examinations must be performed under the supervision of a licensed physician and shall be provided without cost to the employee and at reasonable time and place. Examinations must include a medical and work history and a physical examination with special emphasis directed to the respiratory, cardiovascular and gastrointestinal systems; completion of a standardized medical questionnaire; a chest X-ray administered at the discretion of the physician, and pulmonary function tests. These examinations must be made available annually.

If adequate records exist that show the employee has been examined in accordance with the standard within the past year, no additional medical examination is required.

The employer must give the examining physician a copy of the standard and Appendices D, E, and I; a description of the employee's duties relating to the employee's asbestos exposure; the exposure level or anticipated exposure level; a description of any personal protective and respiratory equipment used or to be used; and information from previous medical examinations. The employer must obtain

a written opinion from the physician that contains the results of the medical examination and the physician's opinion as to whether the employee has any detected medical conditions that would place the employee at an increased risk from exposure to asbestos, any recommended limitations on the employee or upon the use of a personal protective equipment such as respirators, and a statement that the employee has been informed by the physician of the results of the medical examination. The physician is not to reveal in the written opinion given to the employer specific findings or diagnoses unrelated to occupational exposure to asbestos. The employer must provide a copy of the physician's written opinion to the affected employee within 30 days from its receipt.

Recordkeeping

The employer must keep an accurate record of all measurements taken to monitor employee exposure to asbestos. This record must include the date of measurement, operation involving exposure, sampling and analytical methods used and evidence of their accuracy; number, duration, and results of samples taken; type of respiratory protective devices worn; and name, social security number, and the results of all employee exposure measurements. This record must be kept for 30 years. The employer must maintain an accurate record for each employee subject to medical surveillance. The record must include the name and social security number of the employee, a copy of the employee's medical examination results, physician's written opinions, any employee medical complaints related to exposure to asbestos, and information provided to the examining physician as described under medical surveillance. This record must be maintained for the duration of employment plus 30 years.

The employer must maintain all employee training records for 1 year beyond the last date of employment by the employer.

All records must be made available on request to the Assistant Secretary for OSHA, the Director of NIOSH,

affected employees, former employees, and designated representatives. When the employer ceases to do business and there is no successor employer to receive the records for the prescribed period, the employer must notify the Director of NIOSH at least 90 days prior to disposal of records and, upon request, transmit them to the Director.

Related Publications

Single free copies of the following publications can be obtained from the OSHA Field Offices or the OSHA Publications Office, U.S. Department of Labor, 200 Constitution Avenue, N.W., Room N-3101, Washington, D.C. 20210. Send a self-addressed mailing label with your request.

OSHA 2056 - All About OSHA

OSHA 3095 - Asbestos Standard For General Industry

OSHA 3084 - Chemical Hazard Communication

OSHA 3047 - Consultation Services for the Employer

OSHA 3111 - Hazard Communication Guidelines For Compliance

OSHA 3088 - How to Prepare for Workplace Emergencies

OSHA 3021 - OSHA: Employee Workplace Rights

OSHA 2098 - OSHA Inspections

OSHA 3077 - Personal Protective Equipment

OSHA 3079 - Respiratory Protection

OSHA 2254 - Training Requirements in OSHA Standards and Training Guidelines

BLS Publication OMB No. 1220-0029 - Recordkeeping Guidelines for Occupational Injuries and Illnesses

OSHA 3104 - Hazard Communication - A Compliance Kit may be ordered from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 for $18.00 ($22.50 for foreign addresses). Specify GPO Order Number 929-02-00000-9. The kit can be ordered from GPO by phone using VISA or MasterCard; call (202) 783-3238.

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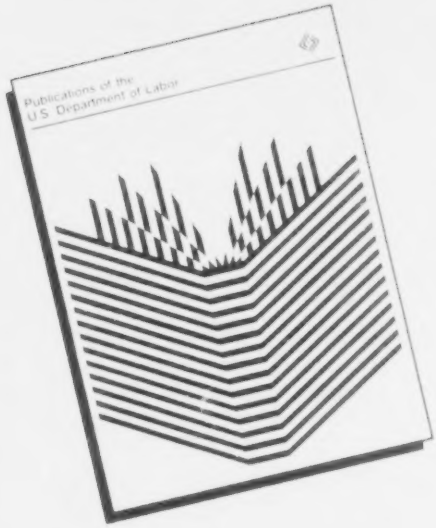

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